

Comparing the results of the investigation of these two samples, it will be seen that as the depth increases both the percentage and the diameter of the minerals decrease, the proportion of vegetable matter also decreasing.

The high percentage of lime in the second analysis is probably due to fragments of shells.

(4) *Yellow-grey Clay.*

One sample was taken off Cherry island in 95 feet, and eight samples off the south-east coast, east of Inverfarigaig, in 250 feet. This is very clayey in character, being soft to the touch and plastic when wet, coherent when dried, and taking in the latter state a light brown streak if rubbed with a hard smooth body.

The Cherry island sample is made up of.—

Minerals (1 per cent.), angular, mean diameter 0·1 mm.: quartz, orthoclase, chlorite, and ferruginous matter.

Fine washings (99 per cent.), composed of clay and very fine mineral particles.

<i>Chemical Composition.</i>	
Total silica	58·42
Ferric oxide	9·51
Alumina	24·58
Lime	0·52
Magnesia	3·74
Manganese	2·11
Copper oxide	0·65
Loss on ignition	0·59
	100·12
	100·12

One of the eight other samples is made up of —

Minerals (29 per cent.), angular, mean diameter 0·1 mm . quartz and decomposed felspar, with a decomposed ferruginous mineral.

Fine washings (71 per cent.), composed of vegetable matter (4·2 per cent) and clay and mineral particles (66·8 per cent).

<i>Chemical Composition.</i>	
Total silica	50·94
Ferric acid	14·76
Alumina	19·80
Lime	6·58
Magnesia	3·61
Loss on ignition	4·20
	99·89
	99·89

In these analyses the lime and magnesia probably belonged to some ferro-magnesian mineral, which was subsequently transformed into what is given here as “ decomposed ferruginous mineral,” the advanced state of decomposition preventing its determination.